FastTrak® S150™ SX4-M Serial ATA RAID Controller

Cost-Effective, High-Performance Serial ATA RAID 5 Solution from the Worldwide Leader in ATA RAID Technology

FastTrak® S150™ SX4-M
:: 4 Serial ATA/150 ports

The FastTrak S150 SX4-M Overview

The FastTrak S150 SX4-M Serial ATA RAID PCI adapter delivers industry-leading RAID 5 performance at an unprecedented performance-to-price ratio. For companies running popular applications like web services, file/email servers, audio/video streaming and nearline storage, the FastTrak S150 SX4-M opens the world of professional RAID 5 performance and data protection and combines it with cost-effective Serial ATA (SATA) drives for the ultimate internal storage solution. Based on OEM-proven RAID 5 technology, the FastTrak S150 SX4-M competes with SCSI RAID 5 controllers—at one-half to one-third of the price. RAID 5 storage protection is no longer the privilege of budget-rich IT departments.

Maximize RAID Performance with Serial ATA Drives

The FastTrak S150 SX4-M is designed for RAID-perfect Serial ATA. Serial ATA is an evolutionary replacement for the Parallel ATA physical storage interface. The Serial ATA standard incorporates highly anticipated features that are ideally suited for ATA RAID use such as:

- :: Thinner Serial ATA cables up to one meter long to provide flexible routing and better airflow
- :: Simpler drive configuration, jumper setting is no longer required during installation
- :: Point-to-point configuration to support one drive per cable and achieve performance scalability
- :: Higher availability with hot pluggable drive support
- :: Enhanced reliability with CRC error checking on all protocol phases

Promise Hardware-Assisted RAID 5 Architecture

RAID 5 implementation involves striping data and parity information (XOR) across the storage array. Since those parity calculations are so processor-intensive, RAID 5 controllers traditionally require a dedicated CPU to perform the XOR calculations and manage the array. Instead of adding a costly CPU to the controller, Promise's FastTrak S150 SX4-M controller uses an integrated XOR engine for parity calculations, delivering extraordinary performance at a dramatically lower price. This approach takes advantage of today's ultra-powerful PC CPUs to manage the array and outperform traditional RAID 5 solutions. The FastTrak S150 SX4-M sets a new standard for RAID 5 controllers.

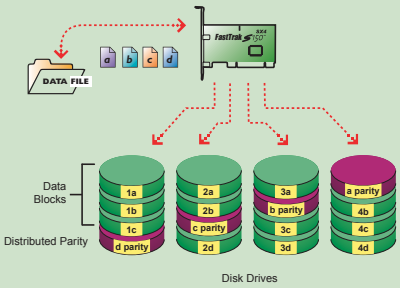
- :: Four-port Serial ATA RAID controller with 1.5Gbps per channel
- :: 32-Bit/66MHz PCI 2.2 interface
- :: Support for RAID level 0, 1, 10, 5 and JBOD
- :: Online array expansion and RAID level migration to add capacity on the fly
- :: Supports hot swap of failed drives
- :: Automatic/manual rebuild of hot spare drive
- :: PerfectRAID™ technology for robust error handling and recovery of fatal, media and disk errors
- :: Variable stripe block size support enables optimization for diverse application requirements
- :: 64MB of cache memory

RAID Serial ATA

PROMISE®
TECHNOLOGY, INC.

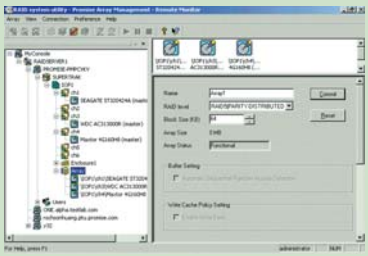
FastTrak® S150 SX4-M SATA RAID Controller

Boosts Storage Performance and Protects User Data and Programs
RAID 5



Shares work among up to 4 drives (RAID 5) for huge storage capacity. Dramatically increases read and write data transfer speeds. Calculates and distributes parity to protect data against drive failure

Sophisticated Array Monitoring Tools



Promise Array Management (PAM) software offers professional management tools in a simple-to-use, straightforward format. Array configurations, management and monitoring features are available via the windows based management and can be access locally or via the TCP/IP network remotely. Moreover, the FastTrak SX family supports industry standard SNMP so third party management application integration is simplified.

The Leader in SATA RAID

Promise Technology, Inc., recognized as the originator and worldwide leader of ATA RAID since 1997, has offered high-performance solutions for PC storage since 1988. Today the world's biggest OEMs and resellers look to Promise for ongoing innovations in ATA RAID design as the company continues to lead with the most powerful and economical alternatives to traditional RAID controllers and subsystems.

www.promise.com

Specifications

Controller Specifications
- Four SATA ports at 1.5Gpbs (150 MB/sec)
- Storage capacity up to 1 terabyte (with four 250 GB drives)
- 32-Bit, 66 MHz PCI bus; PCI 2.2 compliant
- Promise RAID Processor with XOR engine for RAID parity calculations and memory controller for local cache memory
- 64MB Controller cache: 168-pin DIMM slot supports up to 256MB of ECC or non-ECC SDRAM memory (min. 64MB required).
- FRAM for RAID5 transaction log to avoid data corruption in the event of application hangs
- Built-in GPIO ports for enclosure management

RAID Levels Supported
- RAID 5 — Striped parity on 3-4 drives, ultimate data protection, capacity and performance balance
- RAID 10 — Data mirrored then striped across four drives, for double drive failure protection
- RAID 1 — Mirrored pairs of drives for data protection with increased read performance
- RAID 0 — Data striped across 2-4 drives for increased performance but no data protection
- JBOD — Just a Bunch Of Drives: independent connected drives with no RAID interconnection

RAID Fault Tolerance and Robustness Features
- Online array expansion and RAID level migration to add capacity on the fly
- PerfectRAID™ technology for error handling and recovery of fatal, media and disk errors
- DRM™ (Drive Roaming Metadata) technology
  - Supports drive roaming to any port on the controller
  - Allows array roaming in the event of controller failure
- Support hot swap of failed drives and hot spare
- Automatic/manual rebuild of hot spare drive
- Background initialization for instant drive availability
- Background rebuild, migration and synchronization
- Error and event logging
- Variable stripe block size support to meet various application requirements
- Optimal disk utilization with gigabyte rounding
- Support for SMART capable drives
- Synchronization can be scheduled periodically for RAID array data consistency

Advanced Performance Features
- Multiple caching policy support:
  - Write-back and write-through: Write-back for maximum write performance and write-through for data protection in the event of application freeze
  - Predictive read ahead caching based on application and data types
- Packet commands and interrupt coalescing minimize interrupts for better performance
- Elevator seek streamlines commands based on where data is located on the disk
- Load balancing (mirrored RAID array only)

Promise Array Management
- Creates, deletes, expands, and converts disk arrays remotely
- Array synchronization and rebuild scheduling
- Displays drive and array status
- Monitors enclosure status and provides online event logging
- E-mail notification of disk, array, controller or enclosure events (e.g. error or degrade conditions)

Operating Systems*
- Windows: Windows 2000/XP/2003
- Linux: Red Hat 8.0/9.0 and SuSE Linux
- Free BSD 4.8 (coming soon)

FastBuild™ BIOS
- Array configuration utility at the BIOS level
- BIOS Boot Specification support: boot system from any array
- Flash-upgradable BIOS for future upgrades

Limited Warranty 3 Years

* Check www.promise.com for latest operating system drivers

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